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I would like to thank Senator LeBeau, Representative Berger and members of the Commerce Committee for the opportunity to testify on behalf of the Council and the State of Connecticut in its recommendation for Centers for Nanoscale Sciences.

My name is Vincent Caprio, a resident of Easton, Connecticut, and I am the Vice President and Board Member of the NanoBusiness Alliance. The NanoBusiness Alliance is the premier nanotechnology policy and commercialization advocacy group in the United States. NanoBusiness Alliance members span multiple stakeholder groups and traditional industrial sectors, including newly formed start-ups surviving on angel funding or SBIR grants, Fortune 500 companies with multimillion dollar commitments to nanotechnology R&D, academic research institutions, and public-private partnerships working to derive economic development and growth through nanotechnology. This wide group of stakeholders has come together because we believe that nanotechnology will be one of the key drivers of business success, economic growth and quality-of-life improvements in the 21st century. The Alliance provides a collective voice and a vehicle for efforts to advance the benefits of nanotechnology across our economy and society.

With that perspective in mind, I would like to share with you my thoughts on the State of Connecticut and the United States' competitive position in the commercialization of nanotechnology. To briefly synthesize, the U.S. is leading the world today, but our lead is far from secure and we face stiff and accelerating competition. The State of Connecticut needs to become one of the premier States in the United States in the field of Nanotechnology.

Worldwide funding for Nanotechnology research and development (R&D) reached $11.8 billion in 2006, up 13% from 2005. Private spending on nanotech – corporate R&D and venture capital combined – topped government funding for the first time.

Governments spent $5.8 billion on nanotechnology in 2006, a 9% increase over 2005. Of this spending:

- $1.3 billion was in the United States. 2007 U.S. spending will be $1.4 billion.
- $1.7 billion was in Asia, led by Japan
- $2.1 billion was in Europe, led by Germany and the European Commission
- $200 million was in the rest of the world

Established corporations spent $5.3 billion on nanotechnology R&D worldwide in 2006, up 19% from 2005. Of this spending:

- $2.0 billion was in North America
- $2.2 billion was in Asia
- $1.0 billion was in Europe
- $95 million was in the rest of the world

Nanotechnology will have a tremendous impact on virtually every sector of the global economy. Near term applications include scratch resistant coatings, stain resistant textiles, high performance tennis racquets and golf clubs, computer memory and storage, flat panel displays, drug delivery systems, chemical and bio sensors, and dramatically more sensitive and selective diagnostics to name a few. ***Nanotechnology is likely to be the engine of innovation for the next fifty years, and we must be at the forefront of this revolution.***

According to data from Lux Research, Nanotechnology has shifted from the *discovery* phase, dominated by research, to the *commercialization* phase, where products are rapidly becoming available. Its impact is being seen in fields from medicine, where over $3 billion dollars worth of nano-enabled drugs, like Abbott's cholesterol drug Tricor, were sold in 2006; to energy, where A123 Systems' nanostructured battery electrodes appeared on store shelves in Black & Decker's Dewalt power tools; to manufacturing, where Nanogate's tribological coatings have improved the performance of millions of automobiles. Emerging nanotechnology was incorporated into more than $50 billion in manufactured goods in 2006, and by 2014, $2.6 trillion in global manufactured goods will incorporate nanotech.

Furthermore, nanotechnology's implications for homeland security, defense, cleaning the environment, and developing renewable, sustainable energy sources should make its development a key strategic as well as economic goal for the U.S. The impact of nanotechnology on energy and environmental technologies ("cleantech") is growing. Of the 29,874 scientific papers published on cleantech in 2006, roughly 24% involved research on nanotech-based approaches, and, of those publications, 89% were on energy topics. For these reasons, ***we as Connecticut residents cannot afford to hold anything less than a commanding leadership position in the science and commercialization of nanotechnology.***

Thank you Members of the Commerce Committee for your time. I would be happy to answer any questions.